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(54) PROTECTIVE CIRCUIT

(57) Abstract:

PURPOSE: To protect a control circuit against breakdown by detecting a current, flowing into a control circuit of a switching element for driving a load, by means of an overcurrent detector and interrupting a current, flowing into a switching circuit, upon detection of an overcurrent.

CONSTITUTION: A load 2 is turned ON/OFF by turning MOSFETs 7a, 7b ON/OFF based on signals at the output terminals v1-v3 of a control circuit 6 thereby driving a transistor Tr 3. Base current of the Tr 3 flows when the FET 7a is turned ON and the FET 7b is turned OFF. When the collector-base of the Tr 3 is broken, the FET 7b blocks overcurrent if the FET 7a is turned ON and the FET 7b is turned OFF. Overcurrent flows through diodes 8a and the FET 7b when the FET 7a is turned OFF and the FET 7b is turned ON, where a comparing circuit 10 compares the forward voltage drop of the diode 8a with a reference voltage 11 and if the former is higher, a charge pump 9b is energized by the output from the comparing circuit 10 thus turning the FET 7b OFF. According to the constitution, components of the control circuit are protected against breakdown.

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